TALLGRASS WILDLIFE

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How to Get Started

Materials contained in this kit are geared toward grades 3-4 and correlated to Kansas State Education Standards for those levels.

References to items from trunk will be in **bold print and underlined**. Vocabulary words are *italicized*. Graphics with a Figure Number referenced will have accompanying transparencies and digital versions on the CD. Watch for the following symbols to help guide you through the booklet:

Indicates a class discussion point and potential writing activity.

Indicates further resources on the Web for extension learning.

Math Counts! Exercise for mental or written arithmetic.

Vocabulary Counts! New vocabulary that may need reinforcement.

Community Counts! Opportunity for verbal interaction with community members.

Please help us continue to share these treasures with other students by treating the trunk contents with respect.

Good luck and enjoy!

All questions, comments, and suggestions are welcome and should be forwarded to:

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National Preserve
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Strong City, KS 66869
(620)273-8494

Curriculum Standards (Kansas)

The activities and materials in this trunk have been compiled to meet curriculum standards for the State of Kansas Department of Education.

Subjects	Benchmarks	Lesson A	Lesson B	Lesson C	Lesson D	Lesson E	Lesson F	Lesson G	Lesson H	Lesson I
History	1	X								
Physical Science	1								X	
	3			X	X	X	X	X	X	X
Life Science	1		X	X	X	X	X	X	X	X
	2			X	X	X	X	X		X
Earth and Space	1								X	
Environmental	2		X					X	X	X

Curriculum Standards (National)

National Science Education Standards	Standard C: The student understands the characteristics of organisms, the life cycles of organisms, and organisms and their environment. Standard F (Science in Personal and Social Perspectives): Characteristics and changes in populations, types of resources, changes in environment, science and technology in local challenges. Standard G (History and Nature of Science): Science as a human endeavor.
National Council of Teachers of English	Standard 1: Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Standard 3: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.
National Center for History in the Schools:	Standard 3E: The student understands the ideas that were significant in the development of the state and that helped to forge its unique identity. Standard 8B: The student understands changes in transportation and their effects.

PRE-TRUNK ACTIVITIES

1. Have the students talk about the wild animals they've seen. Where did they see them? What were the animals doing?

2. Talk about where the animals live. Some live underground, some on the surface, some in trees, some in rivers and ponds. What physical attributes do these animals have that allow them to live where they do?

3. "What am I" game. Twenty-three signs with animal names / pictures are hung on students' backs without them knowing what the animal is. Then they circulate around the room asking each other only "yes / no" questions to try and gather clues as to their own identity.

   Animal signs include:

deer	coyote
bobcat	fox
squirrel	skunk
opossum	bison
rat snake	collared lizard
badger	horned lizard
grasshopper	butterfly
box turtle	beaver
prairie chicken	meadowlark
red-tailed hawk	raccoon
rattlesnake	jackrabbit
wood rat	

Lesson A: Historic Wildlife

Objectives:

- Students will learn which animals lived here before settlement.

- Students will learn why some of those animals no longer live here.

Materials:

___ laminated pictures of grizzly bear, bison, elk, pronghorn antelope, gray wolf, mountain lion.

Curriculum Standards:

History

B1- the student understands major developments in history.

To learn more about Yellowstone National Park, go to www.nps.gov/yell

Kansas used to be open prairie, from the Missouri River west. After the Louisiana Purchase added the great plains to America's land holdings, the explorer Zebulon Pike traveled through the area just ten miles south of the modern preserve, in 1806. In his journal he wrote, " in one view below me saw buffalo, elk, deer, pronghorn antelope, and panthers (mountain lions)."

When settlers started to move in during the middle of the 19th century, they brought many changes to the prairie landscape and its animal communities. Settlers plowed the grassland, planted crops, and brought cattle to graze on the native prairie. The native grazing animals like the bison, elk and pronghorn antelope were not only losing their grazing land, but were also being hunted heavily, and their populations were quickly reduced.

As the prairie was plowed and trees were cut down, there was a great loss of the habitat upon which these animals depended. Hunting was another reason the larger animals disappeared from Kansas. Large numbers of game animals were harvested without any concern for conservation.

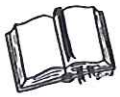
working the fields with horsepower

harvesting the grain

bison herd on the plains

bison at Tallgrass Prairie National Preserve

The American bison is the largest land animal in North America. It can stand 6 feet high at the shoulder, be 10-12 feet long, and weigh 1000 to 2000 pounds. The Native Americans depended heavily on the bison for many products used in every aspect of their lives.



vocabulary counts!

extinct

Bison once numbered in the tens of millions throughout the plains of the midwest. By the late 1870s, however, they were almost *extinct*. By the 1880s, there were only about 1000 bison left on the plains. In 1894, to preserve what was left of the once immense bison herds, they were placed under the protection of Yellowstone National Park. Eventually, more and more bison would be protected, and today there are about 200,000 bison in the United States.

ACTIVITY #1

The bison was a very important animal to the American Indians. The loss of the large bison herds hurt the Indians in many ways.

As a class, have the students list as many uses for parts of the bison as they can. Refer to theNature Conservancy's "**American Bison**" booklet as a guide.

Elk were also abundant before the American settlers moved onto the prairie. Even in the mid-1800s, elk still numbered in the thousands. Hunting and the loss of habitat played key roles in their removal from the plains. The only remaining evidence of their once wild presence is in the form of written records. Today, captive herds can be found in preserves throughout Kansas.

elk

Pronghorn antelope also occurred in large numbers. In historic times, they were nearly as numerous as the bison, but by the 1930s they were gone. Reintroduction programs in the 1960s have resulted in a thousand or more antelope in Kansas today. Although a few can be seen on the eastern edge of the Flint Hills, most are in the western portion of Kansas. One of the swiftest animals on the plains, it can reach top speeds of 55mph!

pronghorn antelope

The bison, elk, and antelope were the largest grazing animals on the plains at the time the settlers arrived. What animals would have been big enough, strong enough, or smart enough to prey on them?

grizzly bear

Learn more about the Lewis and Clark expedition at www.nps.gov

One such predator was the grizzly bear! It also roamed the prairie at that time and was mostly found along the rivers and creeks that drained the prairie. Numerous accounts exist of encounters between grizzlies and Native Americans. Early explorers to the North American plains often wrote of meeting the grizzly bear. Lewis and Clarks' journals spoke of many chance encounters as they traveled up the Missouri River. Although grizzlies could take down a mature bison, they would more likely take calves or sick adults. They would also feed on the *carcasses* of the bison that did not survive the winter.

vocabulary counts!

carcasses

The gray wolf was also present in the prairie, and was probably the main threat to the bison. Although the wolf was a large, strong, and smart predator, it needed the pack to chase and wear down an adult in order to kill it. Typically, they would feed on the old, young, sick, or dead animals. Rarely could they bring down a healthy adult bison. With the arrival of the settlers, however, it too was hunted out of its prairie existence and is now extinct in Kansas. The last wolf in Kansas was killed in 1905.

listen to the howls of the wolf on the Wildlife Sounds CD

wolf

Another large predator that once ranged throughout Kansas was the mountain lion. The greatest numbers of them were probably located in southern Kansas where they found more suitable habitat like streams, hills and grasslands. Today, there are still occasional sightings of mountain lions in Kansas. They prey mostly on deer, but also eat rabbits, squirrels, and rodents.

mountain lion

Although these animals are the most well-known animals to have gone extinct in Kansas, there are many more today that are listed as endangered or extinct.

refer to "A Pocket Guide to Kansas Threatened and Endangered Species" for a more complete listing.

"Endangered" means that animals are dying faster than they are reproducing. There are very few left and their chances of survival are slim. Once a species is "extinct", there are none left. A "local extinction" means that a species is gone from one area, such as the extinctions in Kansas. For example, while there are no longer any grizzly bears in Kansas, there are still grizzlies in other parts of the United States.

There are many reasons why a species may go extinct. In the early development of the United States, during the 18th and 19th centuries, hunting was unregulated and was the main reason for the extinction and near-extinction of certain species. Today the main force driving species to the brink of extinction is the loss of habitat. Every day, around the world, wildlife habitat is being lost due to logging and development to support the growing human population.

ACTIVITY #2

*Discuss the reasons for the extinction and/or removal of wildlife in Kansas.

*Do you know of any animals outside of Kansas that are in danger of becoming extinct today?

to learn more about endangered species in North America, go to www.kidsplanet.org

Lesson B: Nature Observation

Objectives:

- Students will be introduced to the basic skills involved in nature observation.

- Students will learn to use all of their senses to enhance their awareness of their surroundings.

Materials:
___book - "The Raft"
___observation trail bag
___book- "Spot the Differences"

Curriculum Standards:

Life Science
B1 - The student will develop knowledge of organisms in their environment.

Physical Science
B1 - The student will develop skills to describe objects.
B3 - The student will recognize and demonstrate what makes sounds.

Earth and Space Science
B1 - The student will develop an understanding of the properties of earth materials.

Science in Personal and Environmental Perspectives
B2 - The student will demonstrate an awareness of changes in the environment.

ACTIVITY #3

Read the book "The Raft" to the class to help open their minds to the wonderful world outside.

To learn more about watching wildlife in Kansas, go to www.naturalkansas.org

Nature is everywhere. You don't need to go to the Rocky Mountains, the Grand Canyon, or the Ozarks to find nature. Sure, you can find it in the more common places like parks, preserves, and the countryside. But you can also find it in towns and cities and around your homes and schools. It's not the size of the wilderness that's important. Rather, it is the quality of the experience that connects you with nature. You could spend a lifetime just exploring your own backyard. Wilderness exists in your mind and in your imagination. So, don't let the lack of parks and open space in your area keep you from experiencing the wonderful world of nature. Get out there and explore!

Nature's wildlife, in all its different forms, are in a constant struggle for survival. So they are always on the lookout for other creatures that want to eat them. This means that any movement or noise is a warning of danger, and so they will either try to hide or run away. But with care and patience, it's not that hard to see wildlife.

Here are a few tips for watching wildlife:

- Dress in earth colors or camouflage clothing. Some animals can distinguish shapes and tell they are not a natural part of their surrounding. So try to blend in.

- Don't wear perfume or use heavily-scented soaps. Native Americans would use plants to disguise their human scent.

- Find a spot that might offer a glimpse of wildlife without them seeing you.

- Once you're at the spot, settle down and be prepared to wait awhile. Even if animals are disturbed by your intrusion, they will return to normal after a period of time. *(continued)*

- Most importantly...**be still and remain quiet.** Avoid any talking, coughing, or shuffling of feet. Most animals can hear far better than we can!

If wildlife observation were a mathematical equation, it might look like this:

noise + movement = O wildlife

Use the puzzles in the book, "Spot the Differences-Animals" to help reinforce the idea of observation skills.

So first, let's look at some very basic observation skills. Once you've entered a natural area, stop for a few minutes, remaining still and quiet. Any wildlife present saw you long before you saw them and they "froze" or took cover when you approached, and now they are watching you. So without moving your head, let your eyes wander through your viewshed. Besides looking for flying birds, look for silhouettes, especially shapes that look out of place. Tree branches are excellent places to start. The more time you spend outdoors observing, the better you will become at noticing "out of place" objects. You'll instantly recognize branches that have an odd shape, and colors that just don't look right in the "picture".

If you're hiking along, use what's called "splatter vision". This is where you don't really focus on anything in particular, but instead you use your entire field of vision to look for movement. This really opens up your field of view to almost 180 degrees, or as far as your peripheral vision extends to the sides.

ACTIVITY #4

This exercise will illustrate peripheral vision to the students. It is a common test given by eye doctors during eye exams. To begin with, have them pair up. Student #1 will face forward and look straight ahead, without focusing. His partner, student #2, will stand one step away from and slightly behind #1. Student #2 will hold a pencil at the eyelevel of #1 and slowly move the pencil forward into #1's field of vision. When #1 sees the pencil come into his view, he should raise his hand. Repeat for the other side. This will give each student a good idea of his/her peripheral vision, and just how much they can really see when not focusing on any one particular object.

This next activity will let the students see just how much or how little they are noticing when they are in natural surroundings.

ACTIVITY #5

Let's test the students' powers of observation. Teacher will set up an observation trail outside, around 25-30 steps long. Don't let the students see you making it. This trail should be in an area where you have a variety of shrubs and trees. Make sure it is free of litter, since you will be placing your own objects along the way. Using the **observation trail bag**, space the thirteen objects out along the trail. You don't want to hide them totally, but don't place them in plain sight either. Place these objects in bushes, in the grass, on a limb, etc. Place them high, low, close, and farther away. Place green on green, brown on brown, thin on thin, etc. The idea is to see how well the students observe and can distinguish objects, some of which may be camouflaged, in their natural surroundings.

Next, have the students, one at a time, slowly walk the trail and count how many objects they see. They are not to touch the objects. They don't need to write them down, just count. They are not to stop, but are to walk at a slow pace the entire trail. One minute should be a good period of time to walk the trail. While one student is walking, the others are involved in another activity away from the trail so they can't see the walker. Ask them not to tell the other students what they saw. After all the students have walked the trail, go back and walk it as a group, having them point out the objects as they go along. Chances are, nobody will have seen all of them. Record their scores...these will be compared with another trail walk at the completion of the trunk.

Discuss the importance of camouflage in the animal kingdom, and their ability to blend in with their surroundings in order to escape detection by predators.

ACTIVITY #6

This activity will illustrate the selectivity of our senses. We can listen for only those sounds we want to hear, or open up our ears to the full spectrum of sounds around us... a valuable tool in nature observation.

Take the students to a field large enough for them to spread out. Have them bring a notebook and pencil or pen. At the field, have them spread out a good distance from each other, so that there will be no chance to talk with their friends. They are to sit in total silence with their eyes closed. The object of the exercise is to map sounds that they hear. Holding a piece of notebook paper on their lap, the top of the page is the space in front of them, the bottom of the page is behind them, and the left and right sides represent either side of them. When they hear a sound they think is a natural sound, they place an X on the area of the paper that corresponds with the direction from which the sound came. If the sound they heard was a man-made sound, place an O instead. Remind the students to remain absolutely still and silent during the entire exercise. You can run this exercise as long as you wish, but try for a minimum of five minutes.

When the exercise is completed, have the students share their observations. Did anyone hear sounds in all directions? Which sounds did only a few hear? How many heard only natural sounds? How many heard only man-made sounds?

Many ornithologists and wildlife biologists study the sounds of nature to assist them in collecting data in the field. Birdwatchers as well know the calls and songs of many birds so they can identify them when they are hidden from view.

LESSON C: Tracking

Objectives:

- Students will learn the basic tracks left by the more common and observable animals.
- Students will learn about different signs to look for when tracking.

Materials:

___4 rubber tracks
___track picture
___4 rubber scats

Curriculum Standards:

Physical Science

B1 - the student will develop skills to describe objects.

Life Science

B1 - The student will develop knowledge of organisms in their environment.

Every animal leaves evidence of its presence. This is called "sign". Being able to read sign is an important skill in hunting. Indians and early pioneers had to learn to read the signs left by animals in order to survive in the wilderness. "Sign" includes bent blades of grass, gnaw marks on bones and vegetation, feathers, fur, claw marks on trees or the ground, and even scat (poop)! With all of these clues, you can get a bigger picture of an animal's life. These clues can tell you where it's been, what it ate, how old the sign is, the sex of an animal, and many, many more bits of information.

Tracking is a large part of nature observation.It's looking for clues that will tell a story, and perhaps solve a mystery! More than just looking for and identifying animal tracks, it involves the skills gained from many years of experience. But for now, we can look at the more obvious clues....tracks and scat.Tracks, of course, are footprints left by animals of all sizes and shapes. Humans leave footprints, handprints, and even fingerprints. Even the smallest creatures leave tracks. Ants and beetles, snakes and turtles, birds and mice all leave tracks of some sort.

Dirt and mud on trails, stream banks, and shorelines of ponds will provide the best tracks, and they will probably last for some time. Look also for narrow animal trails leading through the grass. If you find a bush or tall grass stem that has been cut off, look closer at the cut. Deer and rabbits will often browse on grasses. Their distinctive chewing styles will tell you which one was munching on it. Deer, having no upper front teeth, will bite and pull, leaving a ragged, torn edge. Rabbits and other rodents will make a clean cut, usually at about a 45 degree angle. Remember too, that deer and rabbits will often stand on their hind legs to reach vegetation.

Let's look at some of the more obvious tracks that you might see on a daily basis. First, when you find a track in the dirt or mud, one thing you can do is count the number of toes. This information is enough to place it in a particular family, thus eliminating others. Members of the cat family have four toes and members of the dog family also have four but their claws leave marks.

The house cat that gets outside will leave tracks that are easy to find and identify. Notice it has four toes and the heel pad has three lobes. Also notice there no claw marks showing.

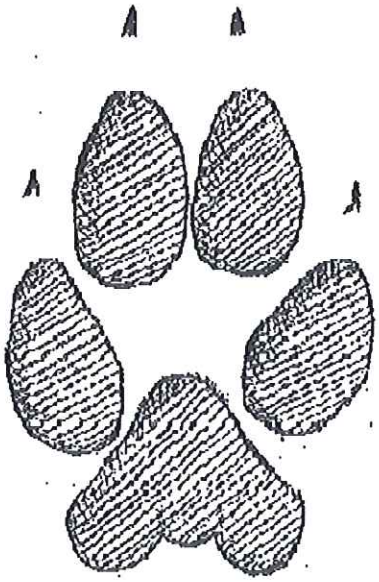
The cat track is about the size of a quarter. Bobcats are at least twice that size. Cat tracks, taken as a whole, are much more round than those of the dog family, which are more oval shaped. Cats claws are also usually retracted when walking, unlike the members of the dog family.

cat, dog, and fox tracks are life-size

cat track

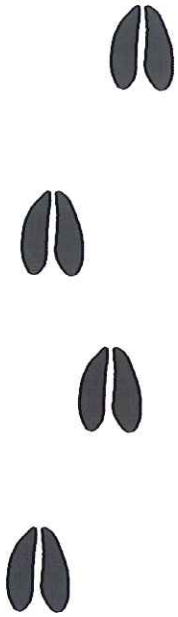
bobcat track

The dog family includes dogs, foxes, coyotes, and wolves. They also have four toes and a heel pad. The dogs claws are usually visible, being four marks just in front of the toes. If you are in the country, you may see tracks that look like dog tracks. There is a good chance they are tracks of a coyote. Tracks of the red fox are very similar to the coyote, but are smaller.



coyote track

redfox track



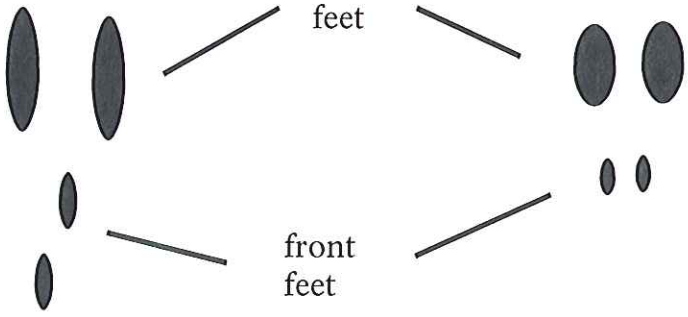
White-tailed deer are plentiful in the preserve and tracks are easy to find, identify, and follow if you know where to go. Most urban parks that border a creek will show signs of deer. Look along the trails or along the creek banks in the mud.

Deer tracks are heart-shaped with a ridge in the middle. The deer family also includes goats, sheep, elk, moose, and deer.

deer track

Rabbits are also fairly easy to track, especially in snow. When they are running, their hind feet land in front of their front feet. In dirt their toes don't always show. However, the relative sizes of their large back feet compared to their small front feet are good field marks.

rabbit tracks



squirrel tracks

direction of travel

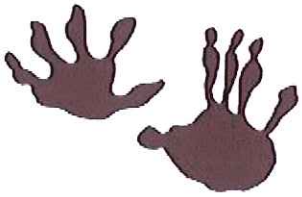
Some of the most interesting tracks belong to the raccoon and opossum. They both have five toes and their prints are similar to human hand prints. The raccoon uses its front paws to hold its food. The opossum's front paws are similar to the raccoons, but the toes on its front paws are spread apart more than the raccoon. The raccoon tracks can be found near streams and our gardens, where they like to help themselves to our fresh veggies!

front

raccoon tracks

rear

front



opossum tracks

rear

Believe it or not, even insects and reptiles leave tracks. As you might imagine, they can be very small tracks, so sometimes you need to get down on your hands and knees to observe them more closely. You might even want to carry a magnifying glass with you to look at the smallest tracks.

mouse tracks

ACTIVITY #7

Look at the track pictures on page 26, (*also on **transparency**, only without the answers*) and try to guess which animal they belong to.

Try the "Track Match" quiz also, on page 27. The answer key is on page 61.

ACTIVITY #8

An interesting and rewarding activity that can be done every day is to monitor a tracking site. Ask the students to set up their own tracking site at home. They are very simple to make and don't really require any materials. To set up a tracking site outdoors, first determine where your dog or cat (if they go outdoors) travels everyday. Somewhere along that route, prepare some bare dirt that will capture its tracks when it walks over the dirt. To prepare the dirt, simply smooth it out and make it level. Don't pack it down; you want the dirt loose. You can also wet down the dirt to see its tracks in mud, and also use snow in the winter. Besides observing your own pets, you might get wild animals that use the route as well. Those students that don't have outdoor pets can still set up a tracking site, but will be capturing the tracks of wild animals (most likely opossum, raccoon, squirrel, mice) or other neighborhood cats and dogs.

If they do have a pet at home, have them follow it around if it goes outside. See how long they can track it. Look not only for tracks, but also rubbings, hair, scratching, or scat. If they really want a challenge, try to follow it without it seeing them.

Another clue used in tracking is scat. Scat is a term for poop. Scat can often be confusing since scat of different species can look similar. If you're not sure which animal left the scat, gather other clues from the area, such as tracks, hair, and location. Scat itself will yield clues about what the animal ate, and may help you reach a conclusion as to what animal it was.

compare the rubber scat specimens included in the trunk.

Deer and rabbit scat are two of the most common and easiest to identify, since they are in the form of pellets. Deer pellets are dark and cylindrical, about 3/4 inch long, and usually 20-30 pellets are found together. Rabbit pellets are only about 1/4 inch in diameter, and resemble a light-green sawdust material.

deer scat

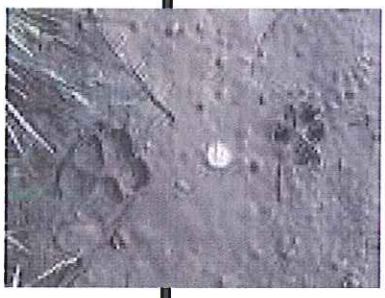
rabbit scat

Most dogs and cats are fed commercially prepared pet food, and so their scat will be quite different from their wild cousins, who eat more small animals and vegetation. Coyote, fox and bobcat scat might look similar to cat or dog scat, but will most likely contain small bones and hair, berries, feathers, or even grass.

raccoon

deer

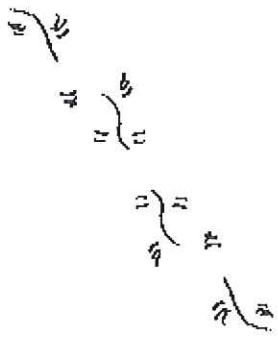
coyote



cat

rabbit

lizard



duck

bird

Track Match

Draw a line connecting the animal with the track that it makes.

Rabbit

Skunk

Raccoon

Opossum

Bobcat

Coyote

Deer

Human

Bison

Lesson D: Today's Wildlife

Objectives:

- Students will get an overview of the animals that are found in the preserve today.

Materials:

___Wildlife Sounds Book/CD
___Tallgrass Wildlife Word Search
___Pocket Guide to Kansas Mammals
___Pocket Guide to Kansas Raptors

Curriculum Standards:

Life Science

B1 - The student will develop knowledge of organisms in their environment.

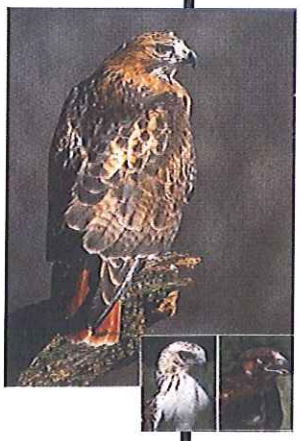
Science in Personal and Environmental Perspectives

B2 - The student will demonstrate an awareness of changes in the environment.

Today, at the Tallgrass Prairie National Preserve, there is still a wide variety of wildlife to be found. The rich diversity of plant life enables a wide variety of animal species to survive in their native habitats.

Listen to the red-tailed hawk on the Wildlife Sounds CD.

Over four hundred species of plants can be found in the preserve, encompassing several different habitats. Riparian, woodland, bottomland prairie, and upland prairie habitats provide conditions necessary for the needs of all the different animals that call it home.

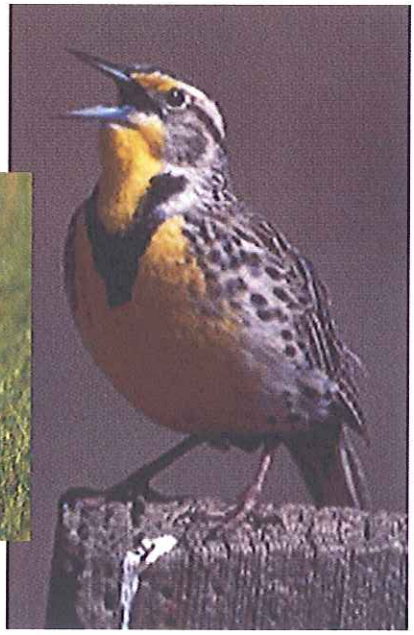


red-tailed hawk

There are one hundred and fifty species of birds that use the preserve during the course of the year. Many of those birds are migratory and only stay for the nesting season during spring and summer. The grasslands provide suitable habitat for many of those birds, some of which fly up from South America in the spring. Having these grassland habitats available are critical to the survival of these migratory birds.

red-bellied woodpecker

greater prairie chickens



Western meadowlark

Learn more about the prairie birds by ordering our traveling trunk "Birds of the Tallgrass" at www.nps.gov/tapr

In the warmer months, amphibians and reptiles can be found throughout the preserve. Thirty-nine species of lizards, snakes, turtles, frogs, toads, and salamanders populate the rocky areas, creeks, ponds, and grasslands.

collared lizard

black rat snake

ornate box turtle

western chorus frog

great plains skink (juvenile)

lightning bug

Insects are very plentiful and are easily observed during the summer months. Grasshoppers, cicadas, crickets, flies, beetles, and lightning bugs are just a few of the many different insects that inhabit the prairie. Thirty-nine species of butterflies have also been recorded, including the popular Monarch.

lubber grasshopper

cicada

monarch butterfly

black swallowtail butterfly larva

There are also forty-one species of mammals that live in the preserve. These include small mammals like mice, voles, shrews, rats, gophers, squirrels and bats. Mid-sized mammals include opossums, woodchucks, jackrabbits, skunks, weasels, raccoons, and armadillo. Larger and more easily seen animals include bison, deer, coyote, and fox.

coyote

bison

raccoon

badger

wood rat

armadillo

white-tailed deer

ACTIVITY #9

Have the class work on the Tallgrass Wildlife word search puzzle on page 32. Answer key on page 63.

TALLGRASS WILDLIFE

G E M D E A A D Z S W D N T D D C O E A G
A R E N I H S A K E P O T E E R I W L N U
E E A K R R M U S S O P O B E K A C A E B
K D D S E L N H L C L E T D U R E N O M G
N B O N E K O R C B C U F G R L E L D O N
I E W S D N A A A M A O B B T A L L L T I
K L L I D B R T E O X D Y B E S T F E T N
S L A R E J U T A N R O G O E E R A R K T
S I R P L B N L D A H E U E T R U R E O H
N E K C I H C E I R I A R P R E T A E R G
I D S O A O L S R C H G B L A B X E I I I
A W E S T E R N C H O R U S F R O G N W L
L O A G E U O A L B J A C K R A B B I T C
P O E A T S O K D U T R I B A O E C C I O
T D S R I F N E H T R K A A A D T R A A R
A P K B H R R E D T A I L E D H A W K R T
E E M K W I I F L E A E U D B C N C L N N
R C R I C O L L A R E D L I Z A R D I K R
G K O K R Y O E T F H O C U G C O I T C C
M E K A N S T A R L O E C T A B U L D R O
I R E I B B P E O Y N D O H N E N X T B E

REDTAILED HAWK
MEADOWLARK
WESTERN CHORUS FROG
COYOTE
WOODRAT
CICADA
MONARCH BUTTERFLY
TOPEKA SHINER
BOBCAT
REDBELLIED WOODPECKER
RAT SNAKE
ORNATE BOX TURTLE
BISON
BADGER
LIGHTNING BUG
OPOSSUM
BULLFROG
JACKRABBIT
GREATER PRAIRIE CHICKEN
COLLARED LIZARD
GREAT PLAINS SKINK
RACCOON
WHITETAILED DEER
LUBBER
RATTLESNAKE
RED FOX
SKUNK

Lesson E: Large Mammals

Objectives:

- Students will learn about some of the larger mammals found in the preserve today.

- Students will learn about the process of reintroducing the bison to the preserve.

Materials:

___bison hair
___book, "Coyotes"
___booklet... "Return of the Bison"
___Pocket Guide to Kansas Mammals

Curriculum Standards:

Life Science

B1 - the student will develop knowledge of organisms in their environment.

B2 - the student will observe and illustrate the life cycles of various organisms.

Physical Science

B3 - the student will recognize and demonstrate what makes sounds.